

THREE NEW SPECIES OF ERICA

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Guthrie and Bolus enumerated 469 species in their treatment of the genus *Erica* in Flora Capensis (1905). Since that time a considerable amount of material has been collected in the Cape.

It is inevitable that a certain amount of variation will have been brought to light by these collections. Some of these variations have made a revaluation of the limits of the existing species necessary with the result that a number of them have had to be treated as varieties or subspecies of older species. However, many distinct undescribed species have appeared in these collections and have been dealt with by various authors. Since 1905 some 136 species have been described making a total of 605 species in the genus. There are also a number still requiring to be described from material in the herbaria and there undoubtedly are more that still have to be discovered.

The three species described below are examples of recently discovered ones that have escaped the eyes of the earlier collectors. The illustrations have been prepared for the book *Ericas in Southern Africa* to be published later this year in Cape Town.

Erica atrovinosa E. G. H. Oliver sp. nov.: Section *Ceramus*—*Frutex* erectus. *Rami* erecti, virgati, glabri, dense tecti foliis multis. *Folia* coarctata dispersa, ad 20 mm longa, teretia, tremula, minute setosa, aristata; petiolis 4 mm longis. *Flores* terminales, umbellata vel demum axillares et verticillata; pedunculi ad 17 mm longi; bracteae 3, breves, in medio. *Sepala* ad 3 mm longa, anguste lanceolata, lanceolata vel anguste ovata late base. *Corolla* ad 10 mm longa, globosa-urceolata, glabra, atrovinosa ad atropurpurea; lobis 4 vel 5, latis crenulatis patentibus. *Stamina* 8 ad 10; filamenta lati late sigmoidei apice; antherae dorsales, scabrae, atrobrunneae, appendiculatae; aristis subcristatis, crassis, scabris, decurrentibus. *Ovarium* turbinatum et stipitatum, glabrum; stylo incluso vel manifesto; stigmate capitato vel capitellato.

Erect shrub up to 60 cm (2 ft) high. *Branches* erect, virgate, glabrous, densely

covered with leaves. *Leaves* crowded, scattered, up to 20 mm long, erect to slightly spreading, tremulous, terete, minutely setose, aristate, pale green, shining; petiole up to 4 mm long. *Flowers* terminal, umbellate up to 36-flowered, or becoming axillary and verticillate by growth at the branch apex; peduncles up to 17 mm long, pubescent, red; bracts 3, up to 5 mm long, linear, the lower larger and leaf-like in miniature, pubescent, aristate, red. *Sepals* up to 3 mm long, narrowly lanceolate, lanceolate or narrowly ovate from a broad base which is sometimes toothed, acuminate, sulcate, glabrous or with a few short hairs on the edges and inner surface and with a few sessile glands, greenish-red or red. *Corolla* up to 10 mm long and 7 mm broad, globose-urceolate, glabrous, bright wine-red at the base turning to dark plum-coloured towards the mouth or more or less plum-coloured; lobes 4 or 5, slightly spreading, broad, obtuse, crenulate. *Stamens* 8–10; filaments flat, broadening into a thick cobra-like hood at the apex, glabrous; anthers included, 1–1.5 mm long, attached middorsally, obtuse, scabrid, straight-sided, bilobed at the base, the front lobe longer than the rear lobe, dark red-brown, appendiculate; pore $\frac{1}{3}$ the length of the cell; awns subcristate, arising from above the middle of the cell, slightly decurrent, straight or spreading, $\frac{1}{2}$ the length of the cell, thick, dark red-brown and scabrid. *Ovary* up to 4 mm long, narrow turbinate becoming globose-turbinate and ridged on a distinct stipe, glabrous, green; style included or manifest, becoming exerted with age, glabrous; stigma capitate or capitellate.

CAPE PROVINCE. Worcester District, between Waaihoek and Mount Superior, 5,000 ft, 24 Jan. 1949, *Esterhuysen* 15119 (BOL, holotype, NBG, PRE). Ceres District, Hex River Mountains, Milner Ridge Peak, 4–5,000 ft, 7 March 1943, *Esterhuysen* 8722; 5–5,500 ft, 26 December 1942, *Esterhuysen* 8463; Shale Peaks, 5,000 ft, 2 Jan. 1955, *Esterhuysen* 24,086; 5,200 ft 22 February 1967, *Esterhuysen* 31,677. Without precise locality, January 1959, *H. F. Wood* s.n.

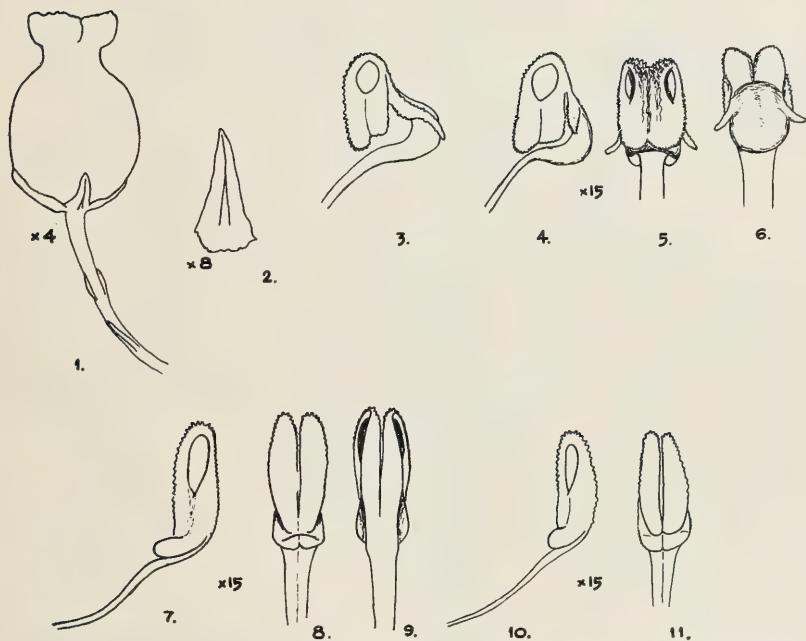
The first specimens of this species were collected in 1942 by Miss Esterhuysen of the Bolus Herbarium. During her many expeditions to the Hex River Mountain complex she has found plants in only three separate localities at high altitudes. In all three of these localities there are relatively few plants. In the population to which Miss Esterhuysen took the author there were about 30 plants in a small area characterised by the presence of shale in the sandstone formation.

The most striking feature of the plants is the unusual colour combination of bright red and plum in the flowers. The plum colour of the upper half of the corolla is covered by a bloom and darkens with the ageing of the flower. In some cases the plum colour more or less covers the whole corolla and is unique in the genus. The name given to the species, *atro*—dark, *vinosus*—wine-coloured, draws attention to this coloration.



PLATE 1.

1. Flowering branch, nat. size; 2. two flowers showing different corolla shapes ($\times 3$); 3. gynoecium and stamens ($\times 6$); 4. anther, side and back view ($\times 10$); 5. leaf, upper and lower surface ($\times 3$); from a collection on Milner Ridge Peak, Ceres District, February 1967, *Esterhuysen 31,677* (BOL, STE, PRE).



Erica atrovinosa; 1. flower; 2. sepal; 3, 4, 5 & 6. anther, two side, front and back views; from Esterhuysen 31677.—*Erica gossypoides*; 7, 8 & 9. anther, side, front and back view; from Esterhuysen 30, 657; 10 & 11, side and front view; from Stokoe 8564.

In the wild state the plants are not very striking from a distance, even though they might be in full bloom, due to the very dark colour of the flowers. So much so that it is difficult to believe that the plants are bearing fresh flowers.

Another distinctive feature about the species is the long shimmering leaves which are crowded together on the branches. This immediately calls to mind the same type of leaf found in *Erica vestita* Thunb. The versatile nature of the leaves is produced by the long thin petioles.

E. atrovinosa is a distinct species but bears a number of characters in common with *Erica inflata* Thunb. It differs from the latter in having a less bushy habit, more crowded leaves which are terete and tremulous and anthers with large pouched filaments and dark thick scabrid awns. The filaments in *E. inflata* are thin and narrow below the anther and the awns are long, thin and pale.

Erica gossypoides E. G. H. Oliver sp. nov.: Section *Gamochlamys*—Species nova et bene distincta, omnibus partibus lanatissimis, corolla glabra et cyathiformis antheris prognathis basi notabilis. *Frutex* erectus. *Rami* multi, erecti, lanati. *Folia* 4—nata ad 6 mm longa, lineares ad lanceolata, sulcata, lanata. *Flores* terminales 2— ad 5—nati, cernui; pedunculi ad 9 mm longi, lanati; bractea 3, basales, breves, lanatae. *Sepala* ad 4 mm longa et 2 mm lata, elliptica ad anguste obovata, dense lanata. *Corolla* ad 6 mm longa et 5 mm lata, cyathiformis, glabra, rosea rubescens; lobis latis obtusis. *Stamina* 8; filamenta breves aequilonga antheris; antherae inclusae, 2 mm longae, prognathae basi, scabrae. muticae; poro $\frac{1}{4}$ — $\frac{1}{3}$ pars longitudinis lobi. *Ovarium* globosum, 2 mm longum, lanatum superne; stylo incluso; stigmatibus capitellato.

A new and distinct species characterised by all parts being very lanate, by a glabrous cyathiform corolla and anthers prognathous at the base.

Erect shrublets up to 45 cm ($1\frac{1}{2}$ ft). *Branches* many, ascending, lanate. *Leaves* 4-nate, up to 6 mm long, linear to lanceolate, sulcate, obtuse, lanate on outer surface, glabrous on inner surface; petiole 1 mm long. *Flowers* terminal, 2- to 5—nate, cernuous; peduncles up to 9 mm long, lanate; bracts 3, basal, 2 mm long, middle one shorter, narrowly obcuneate, lanate on the margins. *Sepals* up to 4 mm long and 2 mm wide, elliptic to narrowly obovate, acute, slightly keel-tipped otherwise flat, densely lanate on the outside, villous on the inside. *Corolla* up to 6 mm long and 5 mm wide, cyathiform, glabrous, pink turning red; lobes very broad, obtuse, rounded. *Stamens* 8, included; filaments short reaching to the top of the ovary, as long as or just longer than the anthers, glabrous, flat; anthers 2 mm long, straight-sided, obtuse, prognathous at the base, dark brown, scabrid, muticous; pore $\frac{1}{4}$ — $\frac{1}{3}$ the length of the cell. *Ovary* globose, 2 mm long, lanate on the upper half, glabrous on the lower; style short, included glabrous; stigma capitellate.

CAPE PROVINCE. Ladismith District, Klein Swartberg, Thursday Peak, shale



PLATE 2.

1. Flowering branch, nat. size; 2. leaf, lower and upper surface ($\times 4$); 3. gynoecium and stamens ($\times 3$); 4. anther, back view ($\times 4$); from the type collection on Thursday Peak, Klein Swartberg, Ladismith District, March 1964, *Esterhuysen* 30,657 (BOL, STE, PRE).

band below cliffs, 6,500 ft, 28 March 1964, *Esterhuysen* 30657 (BOL, holotype, K, PRE, BM, STE, NBG); Hoekoe Peak, 6–6,500 ft, 29 March 1959, *Esterhuysen* 28265 (BOL). Prince Albert District, Swartberg above Klippiess Vlei, December 1942, *Stokoe* 8564 (BOL).

E. gossypoides was first collected by that veteran collector, T. P. Stokoe, on the Great Swartberg in 1942. He gave the locality as "above Klippiess Vlei". This obviously refers to the forestry area, Kliphuis Vlei, which is just west of the top of the Swartberg Pass, Prince Albert District. Very few collectors have been to this mountain range in recent years with the result that there are no further records of this species in the area. The author has visited the Kliphuis Vlei locality on several occasions without locating the species. However, the locality, "above Klippiess Vlei" covers a vast area and it is thus not surprising that the species could not be located.

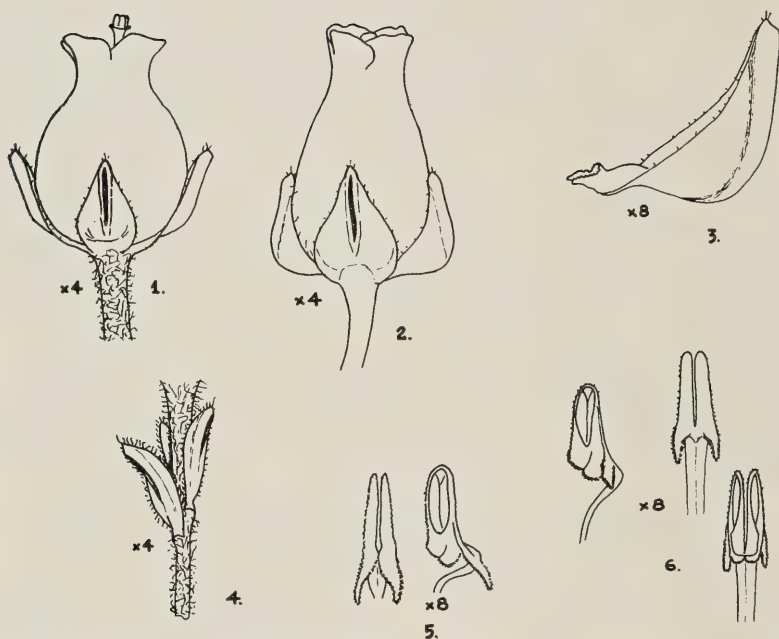
Fortunately Miss Esterhuysen turned the species up in two separate localities 50 miles due west on the same range where it is referred to as the Klein Swartberg. Both populations were between Toverkop and Seven Weeks Poort at high altitudes, 5,000 to 6,500 ft, where the plants are covered by snow every winter. The plants were not common in either area.

The most striking feature of *E. gossypoides* is the extreme woolliness of most parts of the plant. The woolliness of the calyx is like that of a piece of cotton-wool, hence the name of the species. In the genus *Gossypium* the fruiting heads are white-woolly. In the erica the flowers are reminiscent of this in miniature.

The delicate pink colour of the corolla which shows through the woolliness of the calyx soon turns dark red on ageing. When the corolla has closed up, only a small point of red remains projecting beyond the white calyx.

The affinities of *E. gossypoides* are with *E. passerinae* Montin in section *Gamochlamys* and to a lesser extent with *E. trachysantha* Bolus in section *Melastemon*.

It is allied in having a cyathiform, glabrous corolla and basal bracts. It does not however have the characteristic feature of *Melastemon*—a flattened crest above the pore of the anther. It is unlike *E. passerinae* in not having the calyx fused at the base. The inflorescence in these two sections is pseudo-axillary with flowers borne up the stem on very short lateral branchlets. In *E. gossypoides* the flowers are strictly capitate in terminal heads. In this respect the species resembles members of the section *Eriodesmia*. The woolliness of the calyx is characteristic of this latter section. The only character which excludes the species from *Eriodesmia* is the glabrous cyathiform corolla. It is probably best to regard *E. gossypoides* as belonging to the section *Gamochlamys*.



Erica calcareophila; 1 & 2 two different shapes of flower; 3. sepal, side view; 4. peduncle and bracts; 5. anther with large appendages; 6. anther with small appendages all from STE 30, 159.

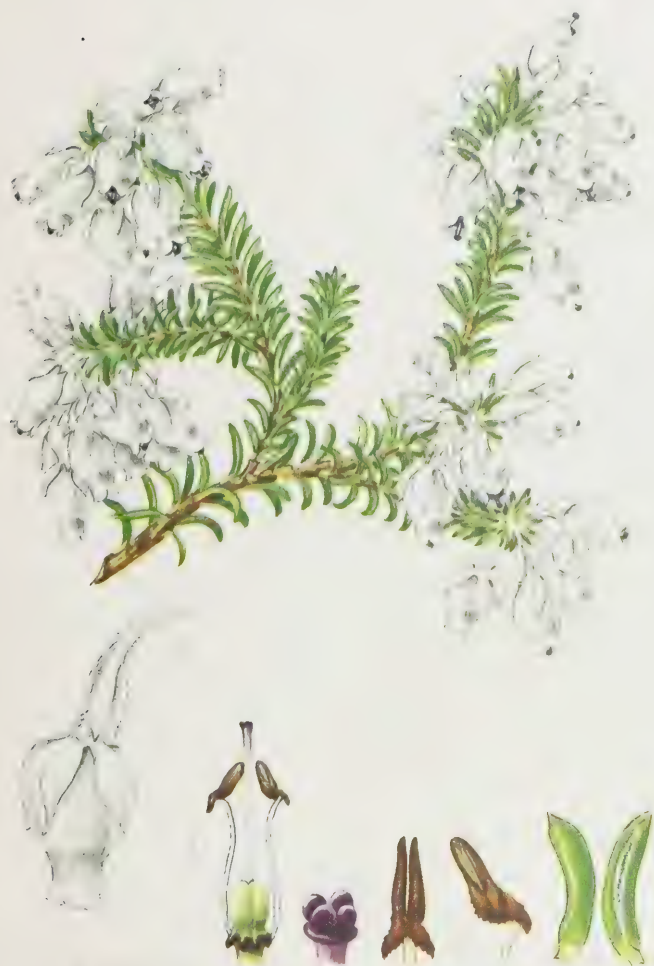


PLATE 3.

1. Flowering branch, nat. size; 2. flower ($\times 2$); 3. gynoecium and stamens ($\times 3$); 4. stigma ($\times 12$); 5. anther, back and side views ($\times 8$); 6. leaf, upper and lower surface ($\times 2$); from the type collection near Hagelkraal, Bredasdorp District, August 1966, *Oliver* in STE 30,159 (STE, BOL, PRE).

Due to circumstances fresh material could not be obtained for the painting for the book. The plate included here is adapted from a painting by Fay Anderson of the type material and the dissections are from the herbarium material.

Erica calcareophila E. G. H. Oliver sp. nov.: Section *Eurystegia*.—*Fruticulus* prostratus vel semiprostratus ad 15 cm (6 ins) altus. *Rami* pauci plani insidens saxis, tecti multis cinereis cicatribus ubi veteres, aliter foliacei. *Folia* 4—nata ad 13 mm longa, patentes, recurvata, minute mucronata, dense ciliata vel glabra marginibus. *Flores* 1— ad 6—nata, terminales, fasciculati versus fines ramorum; pedunculi ad 15 mm longi, dense ciliati; bractee 4—7 mm longae, remotae. *Sepala* 5—7 mm longa, 3—4 mm lata, ovata, glabra, ciliata marginibus, distincte L-formis, valde sulcata. *Corolla* 9—11 mm longa, 5—8 mm lata, globosa-urceolata, glabra, lactea; lobis erectis vel leviter patentibus, obtusis. *Stamina* 8; antherae inclusae, 2·5 mm longae, laterales, scabrae, appendiculatae; aristis rectis. *Ovarium* globosum glabrum; stylo manifesto; stigmatibus capitato, 4-lobato.

Prostrate or semiprostrate shrublet up to 15 cm (6 ins) high. *Branches* few, flat on rocks, gnarled, covered with numerous grey leaf-scars when old, otherwise leafy, occasionally pubescent when young. *Leaves* 4—nate, up to 13 mm long, recurved, spreading, minutely mucronate, densely ciliate-edged or glabrous, rounded, hard in texture. *Flowers* 1— to 6—nate, terminal, clustered at ends of branches, sometimes in dense heads; peduncles up to 15 mm long, densely ciliate, white or reddish; bracts 4—7 mm long, remote, like the sepals but smaller. *Sepals* 5—7 mm long, 3—4 mm broad, ovate, glabrous, ciliate-edged with a few sessile glands intermixed, distinctly L-shaped, strongly keeled, hollowed inside with edges rolled back at the base, white. *Corolla* 9—11 mm long, 5—8 mm broad, globose-urceolate, contracted below the throat, glabrous, wax-like, white; lobes erect or slightly spreading, obtuse. *Stamens* 8; anthers 2·5 mm long, lateral, deeply lobed, roughly scabrid, appendiculate; pore $\frac{1}{2}$ — $\frac{2}{3}$ the length of the cell; awns elongate-cuneate, straight or slightly incurved, scabrid-edged. *Ovary* globose, glabrous; style manifest becoming exerted on ageing; stigma 4-fid, appearing capitate when young.

CAPE PROVINCE. Bredasdorp District, Hagelkraal, on limestone hills, locally frequent, August 1966, *Oliver* in STE 30,159 (STE, holotype, BOL, PRE, NBG, K, BM); Pearly Beach, limestone hills, August 1966, *Oliver* in STE 30,169 (STE).

In many characters this species resembles *E. propinqua* Guthrie and Bolus and *E. excavata* L. Bolus. The most striking difference is in the habit of the plants. The latter two species are erect whereas *E. calcareophila* forms prostrate or semiprostrate shrublets often only a few inches high, gnarled and spreading. However, in a few sheltered corners longer branches are formed but apparently never form erect shrublets as the branches tend to lie against the rocks. In the

area where *E. calcareophila* was collected, *E. propinqua* was growing but on the open slopes as erect shrubs.

Structurally there are three differences. In *E. excavata* and *E. propinqua* the flowers tend to be borne singly in elongate pseudospikes. In *E. calcareophila* the flowers tend to form terminal heads, never elongate pseudospikes. The leaves of *E. calcareophila* are recurved, in some cases only slightly and others markedly so, whereas in the other two species the leaves are straight. There is considerable variation in the leaves of *E. calcareophila*. In the line drawing the most markedly recurved leaves are shown. The awns in *E. calcareophila* are straight unlike the curved, laterally spreading awns in the other two species.

There is some doubt as to the distinctness of *E. propinqua* and *E. excavata* as separate taxa at specific level. The latter could be just a large-flowered form of the commoner *E. propinqua*.

E. calcareophila appears to be very localised on the chain of limestone hills between Pearly Beach and Quoin Point, Bredasdorp District, where it is confined to rocky ledges and boulder-strewn slopes. In one locality at Hagelkraal the plants were locally frequent on large boulders that had broken off the limestone cliffs. All the plants seen were growing on rock or in crevices, none was growing on the open ground.

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In the book *Ericas in Southern Africa* due to be published later this year, name changes made by Dr. H. Dulfer in Ann. Naturhist. Mus. Wien (1965) have been adopted. However one species included in the book was incorrectly treated by Dulfer. It is thus necessary for the correct combination to be made valid prior to the publication of the book.

Two species of *Erica*, *E. grandiflora* L.f. and *E. exsurgens* Andr., were treated as separate species by Guthrie and Bolus in Flora Capensis 4: 57 (1905). Recent investigations of the material show that the two taxa cannot be upheld at specific level and must be treated at varietal level. The following combinations are thus necessary.

Erica grandiflora L.f., Suppl. 223 (1781); Guthrie and Bolus in Fl. Cap. 4: 57 (1905); *E. exsurgens* var. *grandiflora* (L.f.) Dulfer in Ann. Naturhist. Mus. Wien 68: 35 (1965).

Erica grandiflora var. ***exsurgens*** (Andr.) *E. G. H. Oliver* stat. nov. *E. exsurgens* Andr., Col. Heaths t. 22 (1796); Guthrie and Bolus in Fl. Cap. 4: 57 (1905); Dulfer in Ann. Naturhist. Mus. Wien 68: 35 (1965).